

```

class Task:

    def __init__(self, description, due_date, priority):

        self.description = description

        self.due_date = due_date

        self.priority = priority

        self.completed = False


class ToDoList:

    def __init__(self):

        self.tasks = []


    def add_task(self, description, due_date, priority):

        new_task = Task(description, due_date, priority)

        self.tasks.append(new_task)


    def display_tasks(self):

        if not self.tasks:

            print("No tasks in the list.")

            return


        print("\nTask List:")

        for index, task in enumerate(self.tasks, start=1):

            status = "Completed" if task.completed else "Pending"

            print(f'{index}. Description: {task.description}, Due Date: {task.due_date}, Priority: {task.priority}, Status: {status}')


    def mark_completed(self, task_index):

        if 0 < task_index <= len(self.tasks):

            self.tasks[task_index - 1].completed = True

            print("Task marked as completed.")

        else:

```

```
print("Invalid task index.")
```

```
def update_task(self, task_index, new_description, new_due_date, new_priority):
```

```
    if 0 < task_index <= len(self.tasks):
```

```
        task = self.tasks[task_index - 1]
```

```
        task.description = new_description
```

```
        task.due_date = new_due_date
```

```
        task.priority = new_priority
```

```
        print("Task details updated.")
```

```
    else:
```

```
        print("Invalid task index.")
```

```
def remove_task(self, task_index):
```

```
    if 0 < task_index <= len(self.tasks):
```

```
        del self.tasks[task_index - 1]
```

```
        print("Task removed from the list.")
```

```
    else:
```

```
        print("Invalid task index.")
```

```
def main():
```

```
    todo_list = ToDoList()
```

```
    while True:
```

```
        print("\nTo-Do List Application")
```

```
        print("1. Add Task")
```

```
        print("2. Display Tasks")
```

```
        print("3. Mark Task as Completed")
```

```
        print("4. Update Task")
```

```
        print("5. Remove Task")
```

```
        print("6. Exit")
```

```
choice = input("Enter your choice (1-6): ")

if choice == "1":
    description = input("Enter task description: ")
    due_date = input("Enter due date (optional): ")
    priority = input("Enter priority (optional): ")
    todo_list.add_task(description, due_date, priority)
    print("Task added successfully.")
elif choice == "2":
    todo_list.display_tasks()
elif choice == "3":
    task_index = int(input("Enter task index to mark as completed: "))
    todo_list.mark_completed(task_index)
elif choice == "4":
    task_index = int(input("Enter task index to update: "))
    new_description = input("Enter new description: ")
    new_due_date = input("Enter new due date: ")
    new_priority = input("Enter new priority: ")
    todo_list.update_task(task_index, new_description, new_due_date, new_priority)
elif choice == "5":
    task_index = int(input("Enter task index to remove: "))
    todo_list.remove_task(task_index)
elif choice == "6":
    print("Exiting the application.")
    break
else:
    print("Invalid choice. Please enter a number between 1 and 6.")

if __name__ == "__main__":
    main()
```